

**MEDIUM VOLTAGE CROSS-LINKED PE (XLPE) INSULATED POWER CABLES  
LIST OF GUARANTEED CHARACTERISTICS**



CUSTOMER : IMAN CO.  
NO. :  
GOODS NO. OF. CUSTOMER :  
FILE NO. :

<b>1 - GENERAL</b>		<b>GUARANTEED</b>
- Producer		: HES HACILAR ELEKTRİK SAN. VE TİC. A.Ş.
- Cable Code		: N2XSEYFG2Y
- Applied Standards		: IEC 60502-2
- Rated Voltage (U <sub>0</sub> /U)	(kV)	: 12/20
- Max. Operating Voltage (U <sub>m</sub> )	(kV)	: 24
<b>2 - STRUCTURAL PROPERTIES</b>		
<b>2.1 CONDUCTOR</b>		
. Type		: Compacted Conductor
. Material		: Annealed Electrolytic Copper
. Cross-sectional Area	(mm <sup>2</sup> )	: 3x150RM/45
. Number of Wires		: 30 ± 1
. Type of Stranding		: Circular
. Outer Diameter of Strand	(mm)	: 14,3 ± 0,5
<b>2.2 INNER SEMICONDUCTING SCREEN</b>		
. Material		: Semiconductive XLPE
. Nominal Thickness	(mm)	: 0,6
. Minimum Thickness	(mm)	: 0,3
. Outer Diameter of Screen (*)	(Approx.) (mm)	: 15,5
<b>2.3 INSULATION</b>		
. Material		: XLPE
. Nominal Thickness	(mm)	: 5,5
. Minimum Thickness	(mm)	: 5
. Outer Diameter of Insulation (*)	(Approx.) (mm)	: 26,5
<b>2.4 OUTER SEMICONDUCTING SCREEN</b>		
. Material		: Semiconductive XLPE (Semiconductive Tape)
. Nominal Thickness	(mm)	: 0,6
. Minimum Thickness	(mm)	: 0,3
. Outer Diameter of Screen (*)	(Approx.) (mm)	: 27,7
<b>2.5 METALLIC SCREEN</b>		
. Material		: Copper
. Type		: Tape(Filler & Inner Sheath)
. Number Copper Tape	(mm)	: 1
. Copper Tape Thickness (*)	(mm)	: 0,1
. Geometrical Area	(mm <sup>2</sup> )	: 45
. Outer Diameter (*)	(Approx.) (mm)	: 29,3
<b>2.6 ARMOUR</b>		
. Material		: Galvanized Steel Flat Wire &Tape
. Thickness of Zinc Coating of Armour Wires (min.)	(g/m <sup>2</sup> )	: 120
. Width(*) & Thickness of Armour Wires (*)	(mm)	: 4x0.8
. Thickness of Galvanize Coating of Steel Tape (min.)	(g/m <sup>2</sup> )	: 120
. Number of Tapes & Thickness of Steel Tape (*)	(mm)	: 1x0.3
<b>2.7 OUTER SHEATH</b>		
. Material		: HDPE
. Colour		: RED
. Nominal Thickness	(mm)	: 3,50
. Minimum Thickness	(mm)	: 2,60

DATE  
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**3.0 ELECTRICAL PROPERTIES**

3.1	Power Freq. Test Voltages of 5 Minute Duration	(kV-rms)	: 42
3.2	Impulse Test Voltages	(kV-Peak)	: 125
3.3	Continuous Current Carrying Capacity		
3.3.1	Under Ground at a depth of 70 cm (ground temperature 20 °C, ground thermal resistance 1,0 k.m/W)(Flat)	(A)	: 376
3.3.2	In Air (Ambient Temperature 45 °C) (Flat)	(A)	: 371
3.3.3	In Ducts (Ambient Temperature 40 °C) (Flat)	(A)	: 290
3.4	Losses		
3.4.1	Dielectric Losses (at 20 °C, 3 phases)	(W/km)	: 120
3.4.2	Dielectric Losses (at 90 °C, 3 phases)	(W/km)	: 240
3.4.3	Copper Losses ( At Conditions of Clause 3.3.1)	(W/km)	: 53
3.5	Maximum Continuous Conductor Temperature	(°C)	: 90
3.6	Maximum Temperature & Duration of Conductor at Short Circuit Condition	(°C,seconds)	: 250 , 5
3.7	Maximum Short-Circuit Current Start Temperature 90 °C, End Temperature 250 °C)		
3.7.1	Duration of 5 seconds	(kA)	: 9,6
3.7.2	Duration of 1seconds	(kA)	: 21,5
3.7.3	Duration of 0.5 seconds	(kA)	: 30,3
3.8	Maximum Short-Circuit Current at Metallic Screen		
3.8.1	Duration of 1seconds	(kA)	: 6,4
3.8.2	Duration of 0.5 seconds	(kA)	: 9,1
3.9	Conductor DC Resistance at 20 °C (max.)	(Ω/km)	: 0,1240
3.10	Conductor AC Resistance at 90 °C	(Ω/km)	: 0,1587
3.11	Insulation Resistance at 20 °C (min.)	(MΩ/km)	: 1261
3.12	Operating Capacitance (20 °C )	(mF/km)	: 0,24
3.13	Operating Inductance	(mH/km)	: 0,34
3.14	Dielektrik Loss Factor ( tan Ū)		
3.14.1	At 20 °C (max.)		: 0,004
3.14.2	At Maximum Operating Temperature (90 °C) (max.)		: 0,008
3.15	Partial Discharge (at 1,73 U <sub>0</sub> ) (max.)	( pC)	: 10

**4. OTHER PROPERTIES**

4.1	Outer Diameter of Cable (With Tolerance)	(mm)	: 79 ± 3
4.2	Minimum Bending Radius	(mm)	: 1185
4.3	Lowest Laying Temperature	(°C)	: +3
4.4	Weight of Cable (**)	(kg/km)	: 11230
4.5	Total Weight of Copper (**)	(kg/km)	: 3770
4.6	Weight of Armour (**)	(kg/km)	: 1620
4.7	Drums		
	. Type		: HES 240
	. Flange (wheel) Diameter	(mm)	: 2400
	. Barrel Diameter	(mm)	: 1400
	. Barrel Length	(mm)	: 1500
	. Outside Width	(mm)	: 1700
	. Length of Cable (*)	(m)	: 500
4.8	Gross (**) & Net Weight (**)	(kg)	: 6665                      5615
4.9	Core Color		: Brown-Black-Blue
4.10	Cablo Marking		: HES N2XSEYFG2Y 3X150RM/45 mm <sup>2</sup> 12/20 kV IEC 60502-2 03 2013 meter
4.11	Drum Marking		: Producer-Length-Cable Code-Rated Voltage-Cross-sectional Area

\* : ± 5 % tolerance is acceptable for these values  
\*\* : ± 2 % tolerance is acceptable for these values

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